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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,948	09/12/2000	Richard T. Antony	VGS-PA-1	6163
27510	7590	08/25/2005	EXAMINER	
KILPATRICK STOCKTON LLP 607 14TH STREET, N.W. WASHINGTON, DC 20005			DAY, HERNG DER	
			ART UNIT	PAPER NUMBER
			2128	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/659,948	ANTONY, RICHARD T.	
	Examiner	Art Unit	
	Herng-der Day	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 1/21/05, 3/23/05, and 7/25/05.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 21-30 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 21-30 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 January 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/15/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. This communication is in response to Applicant's Amendment ("Amendment") mailed January 19, 2005, received by PTO January 21, 2005; Applicant's Reply ("Reply") to Office Action dated January 27, 2005, mailed March 23, 2005; and RCE mailed July 25, 2005.

1-1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 23, 2005, has been entered.

1-2. Claims 21 and 26-30 have been amended. Claims 21-30 are pending.

1-3. Claims 21-30 have been examined and rejected.

Information Disclosure Statement

2. The Examiner thanks Applicant's submitting the publication of Richard T. Antony. Accordingly, the information disclosure statement is being considered by the Examiner.

Drawings

3. The replacement sheets received on January 21, 2005, are not acceptable and are objected to for the following reasons. Applicant should carefully review all the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include

Art Unit: 2128

all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

- 3-1. Fig. 4 is inconsistent with the specification as described in paragraph [0014].
- 3-2. Color (red) line has been mentioned but cannot be displayed in Fig. 8, Case 3.
- 3-3. As shown in Fig. 18, it appears that the triangle between intersection points 5 and 6 should be hatched.
- 3-4. As shown in Fig. 19, it appears that the intersection point 5 should have a solid black circle.
- 3-5. As shown in Fig. 20, it is unclear why there is a bold black line segment located between B_E and G_E .
- 3-6. As shown in Fig. 21, it appears that the exit tuple G_E should be G_X .
- 3-7. As shown in Fig. 22, it appears that the exit tuple B_E should be B_X and the entrance tuple B_E should be labeled.
- 3-8. As shown in Fig. 23, it appears that the exit tuple G_X should be labeled and the extra entrance tuple B_E should be removed.
- 3-9. As shown in Fig. 24, it appears that the exit tuple G_E should be G_X . Furthermore, the legend is inconsistent with the drawing.

3-10. The specification refers to Fig. 30(a) and Fig. 30(b) at page 32. However, neither (a) nor (b) has been labeled in Fig. 30.

Abstract

4. The Examiner has acknowledged without objection that the abstract has been amended.

Specification

5. The Substitute Specification filed January 21, 2005, is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The amended material, which is not supported by the original disclosure, is as follows:

(1) y intersection point = $(K' - K)/(m - m')$, as shown in paragraph [0076].

Applicant is required to cancel the new matter in the reply to this Office Action.

6. The Substitute Specification filed January 21, 2005, is objected to because of the following informalities. Applicant should carefully review the Substitute Specification. Appropriate correction is required.

6-1. It appears that "As proven below, the procedure is potentially order of magnitudes faster than traditional computational geometry approaches", as described in paragraph [0068], should be "As proven below, the procedure is potentially order of magnitudes faster than traditional computational geometry approaches".

Art Unit: 2128

6-2. It appears that “The bold gray arrows in Fig. 16 trace the boundary closing cycle”, as described in paragraph [00100], should be “The bold gray arrows in Fig. 17 trace the boundary closing cycle”.

6-3. As described in paragraph [00102], “Intersection cycles are outlined in gray/thin line segments”. However, the gray/thin line segments do not represent intersection cycle(s) any more in the corresponding drawings filed January 21, 2005.

6-4. As described in paragraph [00104], “the intersection cycles shown in bold gray depict regions of the cell that are included in the product”. However, the “bold gray” does not represent intersection cycle(s) any more in the corresponding drawings filed January 21, 2005.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 21-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

8-1. Claims 21 and 26 recite the limitation of accumulating result tuples including intersections. However, Applicant’s amendment to the specification using the same expression to compute both the *x* intersection point (paragraph [0075]) and the *y* intersection point

(paragraph [0076]) sets a totally different condition for locating all the intersection points. This new condition does not appear to have support in the original disclosure.

8-2. Claims not specifically rejected above are rejected as being dependent on a rejected claim.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 21-30 are rejected under 35 U.S.C. 101 because the inventions as disclosed in claims are directed to non-statutory subject matter.

10-1. Regarding claims 21-30, it appears to be directed merely to the manipulation of an abstract idea of performing Boolean operations for (boundary, boundary) indexing cell only without resulting in a practical application producing a concrete, useful, and tangible result.

As described in paragraph [00114], “The final set operation product of step 40 (Fig. 6) for two quadtree-represented regions is assembled as the concatenation of the products generated by the three stages of analysis”. Therefore, accumulating result tuples from the set operations on all (boundary, boundary) indexing cells only does not appear to be complete enough to produce a concrete, useful, and tangible result in a practical application.

Allowable Subject Matter

11. Claims 21-30 are not taught by the prior art, and would be allowable if the above rejections under 35 U.S.C. 112, first paragraph and 35 U.S.C. 101 are overcome.

Applicant's Arguments

12. Applicant argues the following:

12-1. Claim Rejections - 35 USC §112

(1) "Claims 21 and 26 have been amended to broaden the claim and remove the limitation" (page 10, Reply).

12-2. Claim Rejections - 35 USC §101

(2) "The claims positively recite the accumulation of result tuples that represent the product of a Boolean operation among a first and second region", "The specification recites several examples of the utility of embodiments of the invention", and "Here, in addition to the utility recited in the claims of accumulating result tuples, the written description contains several assertions of the utility of the invention" (page 11, Reply).

Response to Arguments

13. Applicant's arguments have been fully considered.

13-1. Applicant's argument (1) is persuasive. The rejections of claims 21-30 under 35 U.S.C. 112, second paragraph, in Office Action dated January 27, 2005, have been withdrawn.

13-2. Applicant's argument (2) is not persuasive. While the practical application need not be explicitly recited in the claims, what is claimed must adequately convey the disclosed practical

Art Unit: 2128

application to one of ordinary skill. In this instance, what is claimed appears to be nothing more than using a computer to perform Boolean operations, which is believed to be too preliminary to convey any disclosed practical applications. As such, it is believed that the claims fail to recite a practical application which provides a concrete, useful, and tangible result.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jean R. Homere can be reached on (571) 272-3780. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
August 15, 2005

H.D.

Thai Phan
Thai Phan
Patent Examiner
AU: 2128